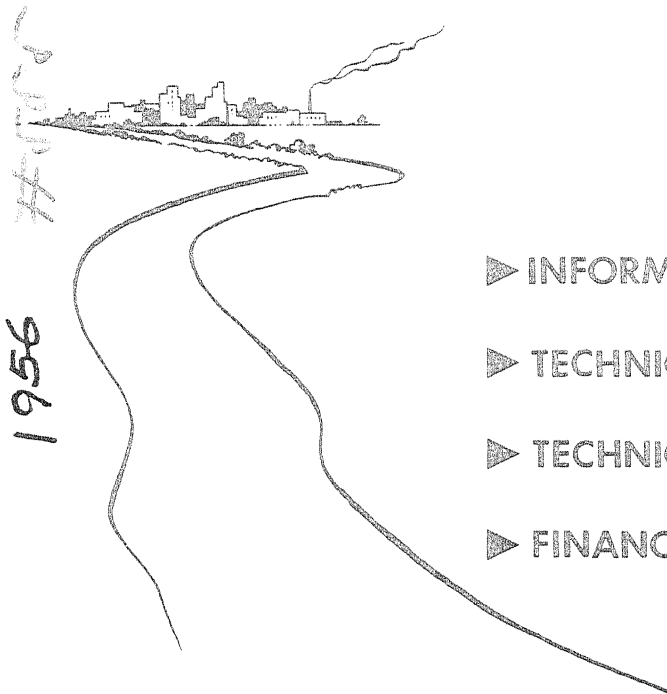


Facts about

the Federal Water Pollution Control Act of 1956



► INFORMATION

► TECHNICAL RESEARCH

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*A booklet for
the Community Leader*

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service

"Pollution is the arch-thief of our national water resources, its prevention and control has become a critical problem in many parts of the country. Our communities, industries, farms, and recreation areas depend upon water of useable quality, and enough of it. The water needs of our increasing population and growing industries cannot be met, however, unless all of us take our share of the responsibility for pollution control. As individual citizens and as leaders in our States, communities, industries, and civic organizations, we can no longer take the availability of good, clean water for granted; we must work to make sure that it is available. The Federal Government's role is defined in the Water Pollution Control Act of 1956, which is administered by the Public Health Service. We in the Service hope that this pamphlet will be of use to groups interested in the Nation's water resources and the provisions of the Federal Water Pollution Control Act."-L. E. Burney, M. D., Surgeon General, U. S. Public Health Service.

**Facts About the
FEDERAL WATER POLLUTION
CONTROL ACT OF 1956
(Public Law 660, 84th Congress)**

**FEDERAL LEGISLATION
IN POLLUTION CONTROL**

Five Federal laws containing major provisions concerned with the control of water pollution have been enacted by the Congress. Two of these, the Rivers and Harbors Act of 1899 (Section 13) and the Oil Pollution Act of 1924, are primarily concerned with preventing damage to shipping, and are administered by the Department of Defense. The 1899 Act prohibits the depositing of waste materials, other than that flowing from streets and sewers in a liquid state, in or on the banks of navigable waters and their tributaries. The 1924 Act prohibits the discharge of oil into the coastal navigable waters of the United States.

The third major Federal enactment regarding water pollution was a provision in the Public Health Service Act of 1912, which gave specific authority to the Public Health Service to conduct investigations of the pollution of streams and lakes by sewage and other causes. It was under this legislation that the Service carried out early research and investigations that provided the basis for information and consultative services to other agencies.

The first comprehensive-type legislation in the pollution control field was the Water Pollution Control Act of 1948 (P. L. 845, 80th Congress) which authorized expanded activities by the Public Health Service. This law, passed after a half-century of consideration of national water pollution problems and evaluation of the responsibility of the Federal government, added the principles of State-Federal cooperative program development, limited Federal enforcement authority, and financial aid. Finally, the particular concern of the Federal government in the growing national pollution problem resulted in the new Federal Water Pollution Control Act (P. L. 660, 84th Congress), which was approved by the President on July 9, 1956. Experience had shown that many of the

principles and provisions embodied in the Act of 1948 were sound, and many were carried over into the new permanent legislation. The new Federal Water Pollution Control Act improves and extends the Federal role in the effort to control water pollution.

OUR NATIONAL FRESH WATER RESOURCES

To most of us, water is a commodity taken as much for granted as the air we breathe. We seldom consider the daily miracle by which the earth's supply is constantly replenished, through the never-ending cycle of precipitation, transpiration, and evaporation. Water falls upon the earth; it runs its life-giving course, and then is drawn back into the sky, soon to fall again re-purified.

In terms of total precipitation, the Nation's water resource is essentially constant. Although it varies in different regions and from year to year, the amount of precipitation that has fallen on this country over the years has averaged about 30 inches per year.

In the semi-arid and arid regions of the western United States, a large proportion of the precipitation is lost through evaporation and by transpiration from vegetation. In the humid eastern areas, the largest proportion runs off over or through the ground to the ocean. The approximately 30 percent of the total precipitation remaining after transpiration, evaporation, and run-off is our fresh water resource. It is obtainable from streams, lakes, surface impoundments, and underground reservoirs or aquifers.

OUR WATER RESOURCES PROBLEM

Our water resources problem is one of making the constant supply meet an increasing demand, and of providing the right quantity of the right quality at the places where it is needed. Most water resource problems stem from the irregularity in distribution of precipitation across the country and with the seasons of the year. Consequently, and despite the apparent abundance of water implied by the average figures, in many areas the amount of readily available water is quite limited.

Although this limited amount may be considered as essentially "fixed," it must meet the constantly increasing demands of our growing population, changing technology, and expanding industry. Water use for all purposes is on the increase, especially for municipal, industrial, irrigation, and recreational purposes, and for transportation of wastes.

Our country has become a tremendous water user. In 1900, we used a total of only 41 billion gallons of water per day. In 1945, geared to a war production such as the world had never seen, we used an average of 175 billion gallons of water each day. But today, only 12 years later and in a peacetime economy (with preparedness), we are using an estimated 280 billion gallons per day. By 1975, only 18 short years away, we estimate that fresh water use will be 350 billion gallons per day. And these figures do not include salt water use nor the tremendous increase in water use for recreational bathing, boating, fishing, and other purposes not measurable in gallons. The 350-billion-gallon estimate for 1975 is this low only because of the attention now being given by municipalities and industries to more efficient use of their available supplies.

Water shortage areas are developing in all parts of the country. In 1955, for instance, a Public Health Service survey showed that there were 66 water shortage areas, affecting a total of about 18,000,000 persons, as well as associated industrial and commercial activities. Most of these shortages were caused by underdevelopment of available sources of supply or by drouths; but others were caused by mis-use and pollution. Whatever the causes, the affected water supplies must be increased to adequately serve the dependent populations and industries. This requires good, clean water which is itself becoming increasingly in short supply because of mounting pollution.

ROLE OF POLLUTION IN WATER RESOURCES PROBLEMS

Polluted water is a wasted water. The greater the degree of pollution, the greater the waste. Pollution is just as effective as drouth in reducing the availability of a water resource for use.

Pollution control, therefore, is becoming recognized as one of the key aspects of the over-all problem of augmenting and conserving water supplies.

Although considerable conservation can be accomplished through such means as construction of storage reservoirs, and of aqueducts to transport water from one region to another, these are expensive measures. A valuable, economical, and necessary supplement is pollution control which permits the repeated re-use of the same water as it flows from city to city, and from industry to industry.

The pollution situation is steadily worsening nationally, in spite of progress that has been made in some areas. In 1920, the "population equivalent" of municipal wastes reaching our streams was 40 million. (This means that the organic matter in the sewage discharged from our sewered population was equivalent to the organic matter in untreated sewage from 40 million persons.) In 1955, the population equivalent of municipal wastes had increased to 55 million, in spite of the appreciable progress made in sewage treatment works construction.

The increase in pollution with respect to industrial wastes has been even greater. In 1920, organic industrial wastes accounted for a pollution load having a population equivalent of about 50 million, but by 1955 this figure had risen to approximately 110 million. In addition, inorganic industrial wastes, which cannot be measured in the same terms as organic wastes but which are often even more damaging to water uses, are estimated to have increased in the same proportion.

In recent years the pollution problem has been compounded by the growing list of new contaminants resulting from our expanding synthetics and radiological technologies. The physiological affects of many of these new wastes are not known; some of the wastes interfere with the operation and efficiency of existing water and waste treatment facilities, both municipal and industrial; others interfere with the self-purification capacities of streams.

DECLARATIONS OF POLICY IN THE FEDERAL WATER POLLUTION CONTROL ACT

In authorizing a Federal water pollution control program, the Congress has made it clear that *primary* responsibility in this field rests with the States, with the Federal government in a supporting role. In both the 1948 and 1956 laws, it is declared to be the policy of the Congress "to recognize, preserve, and protect the primary responsibilities and rights of the States in controlling water pollution." The 1956 law adds that "nothing in this Act shall be construed as impairing or in any manner affecting any right or jurisdiction of the States with respect to the waters (including boundary waters) of such States."

The new Act further declares it to be the policy "to support and aid technical research relating to the prevention and control of water pollution, and to provide Federal technical services and financial aid to State and interstate agencies and to municipalities in connection with the prevention and control of water pollution."

AUTHORIZATIONS IN THE FEDERAL WATER POLLUTION CONTROL ACT

To implement these declarations of policy, the new statute:

1. Authorizes continued Federal-State-interstate cooperation in the preparation and development of comprehensive programs for controlling water pollution.
2. Encourages cooperative activities by the States in
 - a. the prevention and control of interstate water pollution;
 - b. the enactment of improved laws to control pollution;
 - c. the establishment of interstate compacts.
3. Authorizes increased technical assistance to States, a broader research program, the establishment of research fellowships, and the use of contract research and research grants.
4. Authorizes the collection and dissemination of basic data on water quality and other information relating to the prevention and control of water pollution.
5. Authorizes appropriation of \$3 million per year for 5 years for grants to State and interstate agencies to assist in their pollution control activities.

6. Authorizes Federal grants of \$50 million a year (with an aggregate of \$500 million) for the construction of municipal sewage treatment works.
7. Authorizes the establishment of a Water Pollution Control Advisory Board appointed by the President.
8. Modifies and simplifies procedures governing Federal abatement action against interstate pollution.
9. Authorizes a cooperative program to control pollution from Federal installations.

The Act thus provides a broad base for Federal cooperation in water pollution control. In approving the new legislation, President Eisenhower pointed out that the provisions relating to research, State program grants, and Federal control of interstate pollution "will help to further our national attack on water pollution in a manner that properly preserves the areas of Federal, State and local responsibility."

COMPREHENSIVE WATER POLLUTION CONTROL PROGRAMS

The new Act provides for the development of comprehensive programs for eliminating or reducing water pollution to be prepared in cooperation with other Federal agencies, State and interstate water pollution control agencies, municipalities, and industries. In developing these programs, due regard shall be given to all water uses--public water supplies, propagation of fish and aquatic life and wildlife, recreational purposes, and agricultural, industrial, and other legitimate uses.

A comprehensive program is a blueprint to guide community officials, civic leaders, industrial interests, conservation groups, and others in planning action to preserve their water resources. Such a comprehensive plan identifies the causes of pollution and their effect on the water resources. It involves agreement on the desired water uses and the water quality objectives that must be achieved to permit these uses. It outlines the pollution control measures that must be taken to permit the desired uses and should include a timetable for their accomplishment. The plan shows the

community the benefits it will gain if the needed pollution control measures are carried out and what it will lose if they are not. It is thus an effective tool in focusing public attention on a pollution situation and the benefits to be gained from its control.

INTERSTATE COOPERATION

The Act directs the Surgeon General to encourage interstate cooperation and the adoption of uniform legislation for the control of water pollution. A "Suggested State Water Pollution Control Act" was developed in 1950 and has been used by many States as a basis for new legislation or amendments to existing laws. A continuing analysis of current State laws is carried on to provide the basis for specific recommendations for strengthening such legislation. Development of recommendations on water resource policies relating to pollution control is also planned as an aid to States preparing legislation in the over-all water resources field.

The Service works with the States in developing and improving methods of interstate cooperation through formation of interstate compacts and other similar mechanisms, and technical assistance is provided to such interstate agencies in connection with their pollution control activities. Five interstate agencies having pollution control as a principal function have been established by formal compacts.

RESEARCH, TECHNICAL ASSISTANCE AND TRAINING

The new and broadened research, technical assistance, and training provisions of the Federal Water Pollution Control Act are a great step forward toward the solution of the Nation's water pollution problems. The Act provides for a broader research program within the Public Health Service and for greater Federal cooperation in these areas through research grants, research fellowships, contract research, demonstrations, and training. These authorizations will permit the Public Health Service to provide needed leadership in water pollution prevention and control, and will direct much more of the Nation's technical competency to bear on the problem.

Research is one of the most important areas of Federal activity in the cooperative water pollution control program. This has long been recognized, and for more than half a century the Public Health Service has been active in water pollution studies. These studies are now carried out in the Service's new Robert A. Taft Sanitary Engineering Center in Cincinnati, Ohio, which is the largest and most modern research facility of its kind in the Nation.

In recent years pollution problems resulting from population increases, industrial expansion, and technological developments have multiplied much faster than the total of solutions derived from all research activities. In particular, more knowledge is needed on the ability of present water and waste treatment processes to cope with increased volumes and new kinds of pollution; also, whether our many new industrial wastes have physiological effects on animals and man. It is increasingly important to develop the most efficient and economical treatment methods possible. The value of research in the fields of health and industry has been demonstrated many times; similar values can result from adequate water pollution research.

Intramural Research

A broad research program within the Public Health Service (intramural) provides for national coordination in water pollution prevention and control by encouraging, stimulating, and guiding the national research effort. Equally important are the contributions intramural research makes to the total effort, and the pool of highly-trained specialists it provides for assistance and consultation on outstanding problems.

Basic research will provide fundamental knowledge of pollution causes and effects, develop vitally needed tools for their measurement, suggest guides for grant and contract research projects, and furnish information on which to base studies, investigations, and design of prevention and treatment measures. Applied research will utilize basic research findings and be directed toward supplying guidance in developing new, more efficient, and more economical methods for waste treatment.

Research Grants and Contracts

Research grants to, and contracts with, public and private agencies and individuals for studies in all phases of water pollution are authorized. Thus it is possible to bring into the cooperative national effort the resources, facilities, and technical skills of public and private research centers and associations, universities, industries, and individuals which might otherwise not be utilized on water pollution problems.

Research grants are an effective and economical means of finding solutions to many problems. It has been demonstrated that such grants attract other money, scientific disciplines, and research into the water pollution field, thus resulting in a great deal of research effort for each dollar of grant funds expended.

Contracts for research of a highly specialized nature can be placed with outside agencies having particular equipment or technical competence not otherwise available.

Research Fellowships

The basic principle of the research fellowship authorization is to attract to and retain in the water pollution field vitally needed engineering and scientist personnel. Growing shortages of these personnel are becoming critical for both operating programs and research. Fellowships will increase the number of qualified research personnel and help pollution control authorities and others to meet the competition for sanitary engineering and allied personnel.

Demonstrations

The normal course of research developments has been from the laboratory to pilot plant to full-scale application. States, municipalities, and industries traditionally await proof of the technical and economic feasibility of laboratory and pilot plant-scale research. Demonstrations provide an excellent means for promoting and accelerating the use of important new tools and processes throughout the water pollution field. At the same time they have

the added benefit of training State, local, and industry personnel in the use of these new developments.

Training

The new training authority in the Act permits the Public Health Service, through its Sanitary Engineering Center at Cincinnati, to provide advanced training based on the most recent research and developments in water pollution control. Short, intensive laboratory and classroom courses and field demonstrations are offered to personnel of State and interstate agencies, municipalities, and other public agencies, and to other qualified persons. Seminars and conferences on special subjects of major interest are other means for training.

Technical Assistance

In recent years the Public Health Service has been receiving increasing numbers of requests to provide technical assistance to State and interstate agencies, other Federal agencies, municipalities, and industries in the investigation and study of special problems. These are problems of an unusual and difficult nature, not occurring often enough in any one State to justify its maintaining the necessary skills and equipment on a full-time basis, but with sufficient frequency throughout the country to constitute major pollution problems. The Sanitary Engineering Center, with its staff of skilled and experienced researchers, is uniquely qualified to perform these special services, as are Public Health Service personnel in the Regional Offices of the Department of Health, Education, and Welfare.

BASIC DATA COLLECTION

To meet the need for basic information on the national water pollution situation the Act authorized the Surgeon General to "...in cooperation with other Federal, State, and local agencies having related responsibilities, collect and disseminate basic data on chemical, physical, and biological water quality and other information..."

This provision implemented, in part, the first major recommendation of the Presidential Advisory Committee on Water Resources Policy which was

"That the present program of basic data collection be accelerated, and be programmed and carried out on a more consistent and definite basis."

This Committee pointed out that the current program for measurement and study of chemical and biological water quality was particularly deficient.

In pollution control, "basic data" consists primarily of information on the sources, kinds, and amounts of pollution; the causes and effects of pollution; the present and future intended uses of waters; the remedial measures needed to accommodate planned water uses; the kinds, costs, and efficiencies of remedial works; and the costs and benefits associated with pollution control.

The Public Health Service is planning a comprehensive basic data collection program to be carried out in cooperation with Federal, State, and local agencies. The data collected will serve as the bricks and mortar, the lath and stone, from which a national water pollution control program can be efficiently constructed. They will permit the planning of water pollution control as an economical, necessary, and integral part of water resource developments. Those data will serve to monitor our water resources to assure that their mis-use does not jeopardize the Nation's future.

STATE AND INTERSTATE PROGRAM GRANTS

From the long-range viewpoint, perhaps the most significant provision in the Federal Water Pollution Control Act is the one authorizing grants to State and interstate water pollution agencies to assist them in meeting the costs of establishing and maintaining adequate programs in keeping with their own pollution problems. These are matching grants in effect. States are required to provide from one-third to two-thirds of the funds for their own programs.

Enormous pollution problems have been thrust on the States in recent years by the rapid increase and concentration of industry and the continuing growth of urban areas. Many States have expanded their programs to meet these growing problems, but most have not been able to expand sufficiently for the job they need to do. To illustrate, for fiscal year 1957, 25 States and Territories had annual appropriations of less than \$50,000 for water pollution control. Ten of these had less than \$20,000 a year, and one State had no appropriation at all for water pollution control activities.

To assist the States, the Act authorizes the appropriation of \$3 million for each of the fiscal years from 1957 through 1961. Matching grants have stimulated States to increase their appropriations for water pollution control programs in the past, and it is expected the present grant program will have a similar effect.

GRANTS FOR CONSTRUCTION OF TREATMENT WORKS

Grants for construction of sewage treatment works, as an integral part of the Federal water pollution control program, are new. The reasons for including the construction grants provision are given in the House of Representatives Committee on Public Works report* which stated:

"On the basis of testimony and evidence presented during the hearings on this bill, the majority of the committee believes that the need for Federal financial assistance for the construction of sewage-treatment works has been clearly demonstrated. The only time the construction of sewage-treatment works kept pace with the need for such construction was during the period 1933 to 1939 when Federal funds were made available through such programs as the Public Works Administration and the Works Progress Administration. Before that and since then construction has lagged until today there is a backlog of needed treatment works totaling about \$2 billion. Needed construction to take care of this tremendous backlog and at the same time keep pace with the ever-growing demands on cities and towns due to increased population and industrialization in the vicinity requires great capital outlay. Representatives of these cities and towns testified as to the need for financial assistance. Many communities have reached their legal bonded indebtedness limit. Others are limited by State law and constitution as to their tax sources and their expenditures. Others are simply financially unable to raise sufficient revenue to construct needed treatment works.

*House Report 2190, 84th Congress, on the proposed revision of the 1948 Water Pollution Control Act

"Federal financial aid for construction as provided in this bill will serve to accelerate local programs of treatment works construction by providing an incentive to take action now to clean up the waters of this country."

The Act provides for the appropriation of \$50 million each year up to an aggregate of \$500 million, for grants to any State, municipality, or inter-municipal or interstate agency for the construction of treatment works. Individual grants for any project cannot exceed 30 percent of the estimated reasonable cost of the project or \$250,000, whichever is smaller. Also, 50 percent of the funds appropriated for any fiscal year must be used for grants to municipalities of 125,000 population or less. The portion allotted to each State is computed on the basis of the State's population and per capita income and their relation to the National population and per capita income.

The construction grants provision is intended solely as a means of stepping up construction of treatment works. In approving the new legislation the President urged "that no community with sufficient resources to construct a needed sewage treatment project without Federal aid postpone that construction simply because of the prospect of a possible Federal grant. It should be clearly understood that Federal aid will not be available to all communities and, with respect to any one project, the Federal funds are limited in amount under the provisions of the bill."

In keeping with the intent of the Congress, the construction grants program is being administered jointly with the States.

WATER POLLUTION CONTROL ADVISORY BOARD

The new law provides for a Water Pollution Control Advisory Board and specifies that the Chairman of the Board shall be the Surgeon General or a sanitary engineer officer designated by him, and that nine members, none of whom shall be Federal officers or employees, shall be appointed by the President for terms of three years. These members are to be appointed from among representatives of State, interstate, and local governmental agencies; public or private interests contributing to, affected by, or concerned

with water pollution; and other public and private agencies, organizations, or groups demonstrating an active interest in the field of water pollution prevention and control.

The Advisory Board serves the Surgeon General by advising, consulting with, and making recommendations to him on matters of policy relating to his activities and functions under the Federal Water Pollution Control Act.

ENFORCEMENT MEASURES AGAINST POLLUTION OF INTERSTATE WATERS

The new legislation provides, as did the Act of 1948, authority for enforcement measures against pollution of interstate waters, where such pollution endangers the health or welfare of persons in a State other than the one in which the discharge of pollution originates.

The enforcement provisions of the Act stemmed from many conferences held with State and interstate administrators, conservation groups, civic associations, and others who were interested. Guided by recommendations from these interests, the House Public Works Committee drafted the present enforcement provisions. In reporting on the new bill, the Committee stated:

"The Committee believes these procedures constitute a reasonable balance between the primary rights of the States to control water pollution within their boundaries and rights of the States affected by pollution from another State to have available to them a practical remedy...."

The new procedures differ from those of the previous Act principally in that:

1. the Surgeon General is authorized to call conferences of State and interstate agencies and others concerned to determine the nature of interstate water pollution problems;
2. a public hearing must be held before a finding of pollution can be made; and
3. the Surgeon General is authorized to institute proceedings upon request of any State affected by interstate pollution without the consent of the discharging State.

The new Act provides a workable interstate water pollution control procedure. Close cooperation between the Public Health Service, State and interstate agencies, and others, will provide better factual information on interstate pollution problems and, in most instances, solutions will be found during the pre-hearing conferences without the necessity of invoking the formal enforcement procedures of the Act.

COOPERATION TO CONTROL POLLUTION FROM FEDERAL INSTALLATIONS

The new Federal Water Pollution Control Act directs Federal agencies to cooperate with the U. S. Department of Health, Education, and Welfare, and with States, interstate agencies, and municipalities in controlling pollution from Federal installations. The Public Health Service activities in this area will be to maintain an inventory of sources of pollution and to provide technical and consultative services to the Federal, State, and local jurisdictions concerned. The Service will maintain liaison between the affected agencies and will carry out research and investigations as required.

HOW THE ACT IS ADMINISTERED

The Federal Water Pollution Control Act is administered by the Surgeon General of the Public Health Service under the supervision and direction of the Secretary of Health, Education, and Welfare. The provisions in the Act are carried out through the Public Health Service by the Water Supply and Water Pollution Control Program.

A small Program staff is maintained at Headquarters, Washington, D. C., for purposes of policy determination, and coordination with other Federal agencies. Program personnel operate in the field and staff of the Public Health Service in the Regional Department of Health, Education, and Welfare. Personnel carry out most of the activities authorized. They are close to the problems and have established

working relationships with the State, interstate, and local agencies involved. Research and related activities are carried out at the Robert A. Taft Sanitary Engineering Center in Cincinnati, Ohio. Special field projects and technical assistance services are carried out both by the Center and by Regional Office staffs.

The Public Health Service has always considered that the Federal pollution control program should consist only of those activities needed to complement the programs of State and interstate agencies, municipalities, and industries. Therefore, the Federal Water Pollution Control Act is being administered in close coordination with State and interstate agencies, and through them with the local interests, so that a cooperative, well-balanced national pollution control program will result.

